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EXAMINER	
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ART UNIT	**PAPER NUMBER**
2622	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/608,887	STEINBERG ET AL.	
	Examiner	Art Unit	
	Gregory V. Madden	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, 9-29, and 31-44* is/are rejected.

7)☒ Claim(s) *8 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 1, 2007 has been entered.

Response to Arguments

Applicant's arguments with respect to claims 1-44 have been considered but are moot in view of the new ground(s) of rejection.

In Pgs. 13-16 of the Applicant's remarks, the Applicant contends that the Ray et al. reference (U.S. Pat. 6,940,54) fails to teach the adjustment of relative exposure or size of a detected face in a post-image capture process. The Examiner agrees that Ray fails to teach this limitation in each of the independent claims, and thus the previous rejection to the claims is withdrawn. However, the Applicant's arguments are moot in view of a new ground of rejection. As will be noted in further detail below, the Needham et al. reference (U.S. Pub. 2002/0181801), at times in combination with the Fujimoto et al. reference (U.S. Pat. 6,035,074), are believed to teach the limitations of the Applicant's independent claims 1, 5, 15, 21, 23, 27, 37, and 43. Please also refer to the rejections of the dependent claims set forth below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, 15-17, 23, 26, 37-39, and 42 rejected under 35 U.S.C. 102(e) as being anticipated by Needham et al. (U.S. Pub. 2002/0181801).

First, in regard to **claim 1**, the Needham reference teaches within a digital acquisition device, a method of enhancing parameters of a digital image as part of a post-image capture process using face detection (via automatic feature detection unit 250) within the captured image to achieve one or more desired image parameters, the method comprising determining default values of relative exposure (stored as correction parameters 240) of at least some portion of the digital image, determining the values of one or more camera acquisition parameters (i.e. overall contrast or brightness of the input image), identifying a plurality of groups of pixels that correspond to an image of a face within a digitally-captured image (via automatic feature detection unit 250), and determining values corresponding to relative exposure of the group of pixels (i.e. contrast or brightness of the detected face), comparing one or more default values of relative exposure with one or more captured values of relative exposure based upon analysis of the image of the face (in feature-based correction unit 270), and adjusting (via feature-based correction unit 270) in a post-image capture process the image parameters including adjusting the values of relative exposure (i.e. contrast and/or brightness) of the face. Please refer to Figs. 2, 4, 5, and 7, and Paras. [0015-0034].

As for **claim 4**, the limitations of claim 1 are set forth above by Needham, and the Needham reference further teaches that the method comprises determining and adjusting one or more values of relative exposure (i.e. contrast and brightness) of the face. See Paras. [0017-0021].

Next, considering **claim 15**, the Needham reference discloses a method of digital image processing using face detection (via automatic feature detection unit 250) to achieve a desired image parameter, the method comprising identifying a group of pixels that correspond to an image of a face within a digitally-detected image (via automatic feature detection unit 250), determining initial values of relative exposure (i.e. contrast or brightness) of at least some of the pixels, determining an initial relative exposure of the digitally-detected image of the face based on the initial values, and automatically adjusting (via feature-based correction unit 270) values of relative exposure of pixels within the digitally-detected image of the face based upon comparison of the initial relative exposure of the face with a desired relative exposure (from correction specification unit 210) of the face. Please refer again to Figs. 2, 4, 5, and 7, and Paras. [0015-0034].

As for **claim 16**, the limitations of claim 15 are taught above, and Needham further teaches that the method is performed within a digital camera, as taught in Paras. [0016] and [0025].

Regarding **claim 17**, the limitations of claim 16 are taught by Needham above, and the Needham reference further discloses that the method comprises determining one or more initial values of relative exposure of the face, and adjusting one or more values of relative exposure (i.e. contrast and/or brightness) of the face. See Paras. [0015-0034].

Next, in regard to **claim 23**, the Needham reference teaches within a digital acquisition device, a method of enhancing parameters of a digital image as part of a post-image capture process using face detection (via automatic feature detection unit 250) within the captured image to achieve one or more desired image parameters, the method comprising determining default values of relative exposure (stored as correction parameters 240) of at least some portion of the digital image, determining the values of one

or more camera acquisition parameters (i.e. overall contrast or brightness of the input image), identifying a plurality of groups of pixels that correspond to an image of a face within a digitally-captured image (via automatic feature detection unit 250), and determining values corresponding to relative exposure of the group of pixels (i.e. contrast or brightness of the detected face), comparing one or more default values of relative exposure with one or more captured values of relative exposure based upon analysis of the image of the face (in feature-based correction unit 270), and adjusting (via feature-based correction unit 270) in a post-image capture process the image parameters including adjusting the values of relative exposure (i.e. contrast and/or brightness) of the face. Please refer to Figs. 2, 4, 5, and 7, and Paras. [0015-0034]. Referring to Paras. [0039] and [0041], Needham further teaches that the above method is performed on one or more processor readable storage devices having processor readable code embodied thereon.

As for **claim 26**, the limitations of claim 23 are set forth above, and Needham further discloses that the one or more parameters include relative exposure (i.e. contrast and brightness) of the face. See Paras. [0017-0021].

In regard to **claim 37**, the Needham reference discloses a method of digital image processing using face detection (via automatic feature detection unit 250) to achieve a desired image parameter, the method comprising identifying a group of pixels that correspond to an image of a face within a digitally-detected image (via automatic feature detection unit 250), determining initial values of relative exposure (i.e. contrast or brightness) of at least some of the pixels, determining an initial relative exposure of the digitally-detected image of the face based on the initial values, and automatically adjusting (via feature-based correction unit 270) values of relative exposure of pixels within the digitally-detected image of the face based upon comparison of the initial relative exposure of the face with a desired relative exposure (from correction specification unit 210) of the face. Please refer again to Figs. 2, 4, 5, and 7, and Paras. [0015-0034]. Referring to Paras. [0039] and [0041], Needham further teaches that the above method is

performed on one or more processor readable storage devices having processor readable code embodied thereon.

Considering **claim 38**, the limitations of claim 37 are taught above, and Needham further teaches that the method is performed within a digital camera, as taught in Paras. [0016] and [0025].

As for **claim 39**, the limitations of claim 38 are taught above by Needham, and the Needham reference further discloses that the method comprises determining one or more initial values of relative exposure of the face, and adjusting one or more values of relative exposure (i.e. contrast and/or brightness) of the face. See Paras. [0015-0034].

Finally, in regard to **claim 42**, again the limitations of claim 37 are taught by Needham, and Needham teaches that the method comprises determining and adjusting a relative exposure (i.e. contrast and/or brightness) of the face, as taught in Paras. [0015-0034].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-3 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Needham et al. (U.S. Pub. 2002/0181801).

Considering **claims 2-3 and 24-25**, the limitations of claims 1 and 23, respectively, are set forth above, and while Needham discloses that the method is performed using a digital camera (See Paras. [0016] and [0025]), Needham does not specifically state that the digital camera can be a digital still camera or a digital video camera. However, Official Notice is hereby taken that it would have been

obvious to one of ordinary skill in the art at the time the invention was made to incorporate the above method in either a digital still camera or a digital video camera. One would have been motivated to do so because the method of adjusting image parameters of a detected face in a post-image capture process would be identical in both a digital still camera and a digital video camera, wherein the only difference would be the speed of processing required. Thus, the final image output to the user would be optimized, regardless of the type of camera (still or video) used.

Claims 5-7, 9-11, 13-14, 18-19, 21-22, 27-29, 31-33, 35-36, 40-41, and 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Needham et al. (U.S. Pub. 2002/0181801) in view of Fujimoto et al. (U.S. Pat. 6,035,074).

Next, in regard to **claim 5**, the Needham reference teaches within a digital acquisition device, a method of enhancing parameters of a digital image as part of a post-image capture process using face detection (via automatic feature detection unit 250) within the captured image to achieve one or more desired image parameters, the method comprising determining default values of one or more image attributes (stored as correction parameters 240) of at least some portion of the digital image, determining the values of one or more camera acquisition parameters (i.e. overall contrast or brightness of the input image), identifying a plurality of groups of pixels that correspond to an image of a face within a digitally-captured image (via automatic feature detection unit 250), and determining values corresponding to image attributes of the group of pixels (i.e. contrast or brightness of the detected face), comparing one or more default image attribute values with one or more captured image attribute values based upon analysis of the image of the face (in feature-based correction unit 270), and adjusting (via feature-based correction unit 270) in a post-image capture process the image parameters including adjusting the image attribute values (i.e. contrast and/or brightness) of the face, wherein the identifying of face pixels is automatically performed by an image processing apparatus (automatic feature detection unit 250). Please refer to Figs.

2, 4, 5, and 7, and Paras. [0015-0034]. What Needham fails to show, however, is that the method further comprises manually removing one or more of the plurality of groups of pixels that correspond to the image of the face. However, noting the Fujimoto reference, Fujimoto teaches that multiple face image areas are automatically detected (via face image selecting section 11-2), and that the user can manually remove a face as a detected face for further processing (by operating the "SELECTION" button), thereby moving to another detected face in the scene for processing. Please refer to Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the manual removal of a plurality of groups of pixels that correspond to the image of the face, as taught by Fujimoto, with the automatic detection and post-processing of detected faces, as done by Needham. One would have been motivated to do so because by allowing the user to manually remove a detected face from a scene, the user can choose only those faces, or objects, which they wish to adjust. Thus, the user has more control over the post-processing and can achieve the desired final image without relying solely on automatic processes done by the digital acquisition device.

As for **claim 6**, the limitations of claim 5 are taught above, and while neither Needham nor Fujimoto expressly state that the method of manually removing a detected face is performed in response to false detection of regions as faces, Official Notice is hereby taken that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have manually removed regions falsely detected as faces, as the user would not want the post-processing adjustment of image attributes completed on objects mistakenly detected as faces. Thus, the automatic detection of faces is not solely relied upon to perform the adjustment of image attributes of particular regions of an image, thereby allowing the user to have more control over the outcome of the final image.

Considering **claim 7**, again the limitations of claim 5 are taught above, and the Fujimoto reference discloses that the manual removal of one or more detected faces is performed in response to a

determination to concentrate on less of the image faces (i.e. not to concentrate only on the largest face in the scene, or to concentrate only on the largest face in the scene) than faces identified in the identifying. Please refer again to Col. 11, Line 46 – Col. 12, Line 45.

In regard to **claim 9**, the limitations of claim 5 are taught above, and Fujimoto teaches that the method of manually removing a detected face is performed by an interactive visual method, via the transparent tablet 2-2 operated by user touch. See Col. 9, Lines 23-31.

As for **claim 10**, again the limitations of claim 5 are taught above, and Fujimoto discloses that the method is performed using an image acquisition built-in display (transparent tablet 2-2), as taught in Col. 9, Lines 23-31 and Fig. 2.

Regarding **claim 11**, the limitations of claim 1 are taught above, and the Fujimoto reference teaches that the method further comprises manually adding an indication of another face (i.e. a face other than the largest face) within the image, as is taught in Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45.

Considering **claim 13**, again the limitations of claim 1 are set forth above, and the Needham reference teaches that the identifying of face pixels is automatically performed by an image processing apparatus (automatic feature detection unit 250) which receives a relative value (feature weight 230) as to the estimated importance of the detected regions, as is disclosed in Para. [0024].

As for **claim 14**, the limitations of claim 13 are set forth above, and Fujimoto teaches that the relative value of the estimated importance of the detected region can be manually modified (i.e. the user can either select or deselect a detected face in the scene, even if the face is not the largest detected face, thereby modifying the estimated importance of the detected face). Please refer to Col. 11, Line 46 – Col. 12, Line 45.

Next, in regard to **claim 18**, the limitations of claim 16 are taught above by Needham, but Needham does not teach that the method further comprises manually removing a false indication of another face within the image. However, the Fujimoto reference teaches that multiple face image areas

are automatically detected (via face image selecting section 11-2), and that the user can manually remove a face as a detected face for further processing (by operating the "SELECTION" button), thereby moving to another detected face in the scene for processing. Please refer to Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45. While Fujimoto does not expressly state that the method of manually removing a detected face is performed in response to false indication of a face, Official Notice is hereby taken that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have manually removed regions falsely detected as faces, as the user would not want the post-processing adjustment of image attributes completed on objects mistakenly detected as faces. Thus, the automatic detection of faces is not solely relied upon to perform the adjustment of image attributes of particular regions of an image, thereby allowing the user to have more control over the outcome of the final image.

Regarding **claim 19**, the limitations of claim 16 are taught above, and the Fujimoto reference teaches that the method further comprises manually adding an indication of another face (i.e. a face other than the largest face) within the image, as is taught in Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45.

Next, considering **claim 21**, the Needham reference discloses a method of digital image processing using face detection (via automatic feature detection unit 250) to achieve a desired image parameter, the method comprising identifying a group of pixels that correspond to an image of a face within a digitally-detected image (via automatic feature detection unit 250), determining initial values of relative exposure (i.e. contrast or brightness) of at least some of the pixels, determining an initial relative exposure of the digitally-detected image of the face based on the initial values, and automatically adjusting (via feature-based correction unit 270) values of relative exposure of pixels within the digitally-detected image of the face based upon comparison of the initial relative exposure of the face with a desired relative exposure (from correction specification unit 210) of the face. Please refer again to Figs. 2, 4, 5, and 7, and Paras. [0015-0034]. What Needham fails to show, however, is that the method further comprises manually removing a false indication of another face within the image. However, noting the

Fujimoto reference, Fujimoto teaches that multiple face image areas are automatically detected (via face image selecting section 11-2), and that the user can manually remove a face as a detected face for further processing (by operating the "SELECTION" button), thereby moving to another detected face in the scene for processing. Please refer to Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45. While Fujimoto does not expressly state that the method of manually removing a detected face is performed in response to false indication of a face, Official Notice is hereby taken that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have manually removed regions falsely detected as faces, as the user would not want the post-processing adjustment of image attributes completed on objects mistakenly detected as faces. Thus, the automatic detection of faces is not solely relied upon to perform the adjustment of image attributes of particular regions of an image, thereby allowing the user to have more control over the outcome of the final image. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the manual removal of a false indication of another face within the image, as taught by Fujimoto, with the automatic detection and post-processing of detected faces, as done by Needham. One would have been motivated to do so because by allowing the user to manually remove a detected face from a scene, the user can choose only those faces, or objects, which they wish to adjust. Thus, the user has more control over the post-processing and can achieve the desired final image without relying solely on automatic processes done by the digital acquisition device.

As for **claim 22**, the limitations of claim 21 are set forth above, and the Fujimoto reference teaches that the method further comprises manually adding an indication of another face (i.e. a face other than the largest face) within the image, as is taught in Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45.

Next, in regard to **claim 27**, the Needham reference teaches within a digital acquisition device, a method of enhancing parameters of a digital image as part of a post-image capture process using face detection (via automatic feature detection unit 250) within the captured image to achieve one or more

desired image parameters, the method comprising determining default values of one or more image attributes (stored as correction parameters 240) of at least some portion of the digital image, determining the values of one or more camera acquisition parameters (i.e. overall contrast or brightness of the input image), identifying a plurality of groups of pixels that correspond to an image of a face within a digitally-captured image (via automatic feature detection unit 250), and determining values corresponding to image attributes of the group of pixels (i.e. contrast or brightness of the detected face), comparing one or more default image attribute values with one or more captured image attribute values based upon analysis of the image of the face (in feature-based correction unit 270), and adjusting (via feature-based correction unit 270) in a post-image capture process the image parameters including adjusting the image attribute values (i.e. contrast and/or brightness) of the face, wherein the identifying of face pixels is automatically performed by an image processing apparatus (automatic feature detection unit 250). Please refer to Figs. 2, 4, 5, and 7, and Paras. [0015-0034]. Further, referring to Paras. [0039] and [0041], Needham also teaches that the above method is performed on one or more processor readable storage devices having processor readable code embodied thereon. What Needham fails to show, however, is that the method further comprises manually removing one or more of the plurality of groups of pixels that correspond to the image of the face. However, noting the Fujimoto reference, Fujimoto teaches that multiple face image areas are automatically detected (via face image selecting section 11-2), and that the user can manually remove a face as a detected face for further processing (by operating the "SELECTION" button), thereby moving to another detected face in the scene for processing. Please refer to Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the manual removal of a plurality of groups of pixels that correspond to the image of the face, as taught by Fujimoto, with the automatic detection and post-processing of detected faces, as done by Needham. One would have been motivated to do so because by allowing the user to manually remove a detected face from a scene, the user can choose only those faces,

or objects, which they wish to adjust. Thus, the user has more control over the post-processing and can achieve the desired final image without relying solely on automatic processes done by the digital acquisition device.

In regard to **claim 28**, the limitations of claim 27 are taught above, and the Needham does not teach that the method further comprises manually removing a false indication of another face within the image. However, the Fujimoto reference teaches that multiple face image areas are automatically detected (via face image selecting section 11-2), and that the user can manually remove a face as a detected face for further processing (by operating the "SELECTION" button), thereby moving to another detected face in the scene for processing. Please refer to Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45. While Fujimoto does not expressly state that the method of manually removing a detected face is performed in response to false indication of a face, Official Notice is hereby taken that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have manually removed regions falsely detected as faces, as the user would not want the post-processing adjustment of image attributes completed on objects mistakenly detected as faces. Thus, the automatic detection of faces is not solely relied upon to perform the adjustment of image attributes of particular regions of an image, thereby allowing the user to have more control over the outcome of the final image.

Considering **claim 29**, again the limitations of claim 27 are taught above, and the Fujimoto reference discloses that the manual removal of one or more detected faces is performed in response to a determination to concentrate on less of the image faces (i.e. not to concentrate only on the largest face in the scene, or to concentrate only on the largest face in the scene) than faces identified in the identifying. Please refer again to Col. 11, Line 46 – Col. 12, Line 45.

In regard to **claim 31**, the limitations of claim 27 are taught above, and Fujimoto teaches that the method of manually removing a detected face is performed by an interactive visual method, via the transparent tablet 2-2 operated by user touch. See Col. 9, Lines 23-31.

As for **claim 32**, again the limitations of claim 27 are taught above, and Fujimoto discloses that the method is performed using an image acquisition built-in display (transparent tablet 2-2), as taught in Col. 9, Lines 23-31 and Fig. 2.

Regarding **claim 33**, the limitations of claim 23 are taught above, and the Fujimoto reference teaches that the method further comprises manually adding an indication of another face (i.e. a face other than the largest face) within the image, as is taught in Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45.

Considering **claim 35**, again the limitations of claim 23 are set forth above, and the Needham reference teaches that the identifying of face pixels is automatically performed by an image processing apparatus (automatic feature detection unit 250) which receives a relative value (feature weight 230) as to the estimated importance of the detected regions, as is disclosed in Para. [0024].

As for **claim 36**, the limitations of claim 35 are set forth above, and Fujimoto teaches that the relative value of the estimated importance of the detected region can be manually modified (i.e. the user can either select or deselect a detected face in the scene, even if the face is not the largest detected face, thereby modifying the estimated importance of the detected face). Please refer to Col. 11, Line 46 – Col. 12, Line 45.

Next, considering **claim 40**, the limitations of claim 38 are taught above by Needham, but Needham does not teach that the method further comprises manually removing a false indication of another face within the image. However, the Fujimoto reference teaches that multiple face image areas are automatically detected (via face image selecting section 11-2), and that the user can manually remove a face as a detected face for further processing (by operating the "SELECTION" button), thereby moving to another detected face in the scene for processing. Please refer to Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45. While Fujimoto does not expressly state that the method of manually removing a detected face is performed in response to false indication of a face, Official Notice is hereby taken that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have

manually removed regions falsely detected as faces, as the user would not want the post-processing adjustment of image attributes completed on objects mistakenly detected as faces. Thus, the automatic detection of faces is not solely relied upon to perform the adjustment of image attributes of particular regions of an image, thereby allowing the user to have more control over the outcome of the final image.

As for **claim 41**, again the limitations of claim 38 are set forth above, and the Fujimoto reference teaches that the method further comprises manually adding an indication of another face (i.e. a face other than the largest face) within the image, as is taught in Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45.

In regard to **claim 43**, the Needham reference discloses a method of digital image processing using face detection (via automatic feature detection unit 250) to achieve a desired image parameter, the method comprising identifying a group of pixels that correspond to an image of a face within a digitally-detected image (via automatic feature detection unit 250), determining initial values of relative exposure (i.e. contrast or brightness) of at least some of the pixels, determining an initial relative exposure of the digitally-detected image of the face based on the initial values, and automatically adjusting (via feature-based correction unit 270) values of relative exposure of pixels within the digitally-detected image of the face based upon comparison of the initial relative exposure of the face with a desired relative exposure (from correction specification unit 210) of the face. Please refer again to Figs. 2, 4, 5, and 7, and Paras. [0015-0034]. Referring to Paras. [0039] and [0041], Needham further teaches that the above method is performed on one or more processor readable storage devices having processor readable code embodied thereon. What Needham fails to show, however, is that the method further comprises manually removing a false indication of another face within the image. However, noting the Fujimoto reference, Fujimoto teaches that multiple face image areas are automatically detected (via face image selecting section 11-2), and that the user can manually remove a face as a detected face for further processing (by operating the "SELECTION" button), thereby moving to another detected face in the scene for processing. Please refer to Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45. While Fujimoto does not expressly state that the

method of manually removing a detected face is performed in response to false indication of a face, Official Notice is hereby taken that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have manually removed regions falsely detected as faces, as the user would not want the post-processing adjustment of image attributes completed on objects mistakenly detected as faces. Thus, the automatic detection of faces is not solely relied upon to perform the adjustment of image attributes of particular regions of an image, thereby allowing the user to have more control over the outcome of the final image. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the manual removal of a false indication of another face within the image, as taught by Fujimoto, with the automatic detection and post-processing of detected faces, as done by Needham. One would have been motivated to do so because by allowing the user to manually remove a detected face from a scene, the user can choose only those faces, or objects, which they wish to adjust. Thus, the user has more control over the post-processing and can achieve the desired final image without relying solely on automatic processes done by the digital acquisition device.

Finally, considering **claim 44**, the limitations of claim 37 are taught above, and the Fujimoto reference teaches that the method further comprises manually adding an indication of another face (i.e. a face other than the largest face) within the image, as is taught in Figs. 10-17 and Col. 11, Line 46 – Col. 12, Line 45.

Claims 12 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Needham et al. (U.S. Pub. 2002/0181801) in view of Ray et al. (U.S. Pat. 6,940,545).

Next, considering **claims 12 and 34**, each of claims 1 and 23 are respectively taught by the Needham reference above, and while Needham does teach that the identifying of face pixels is automatically performed by an image processing apparatus (automatic feature detection unit 250),

Needham does not teach that the image processing apparatus receives a relative value as to a detection assurance. However, the Ray reference teaches a method of automatically identifying a face in image via CPU 30, wherein a relative value as to a detection assurance (referred to as Component W) is received by the image processing apparatus (CPU 30) (See Col. 7, Lines 58-62 and Col. 11, Lines 8-67). It would have been obvious to one of ordinary skill in the art to have included the relative value as to detection assurance, as taught by Ray, with the automatic detection of faces in an image, as shown by Needham. One would have been motivated to do so because by providing a value as to detection assurance, an automatic detection unit (such as automatic feature detection unit 250 of Needham) can more accurately detect faces within an image, and will less likely provide false positives to the user, which in turn require more manual intervention by the user to perform desired image processing.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Needham et al. (U.S. Pub. 2002/0181801) in view of Kinjo (U.S. Pat. 7,106,887).

Finally, in regard to claim 20, the limitations of claim 15 are taught above by Needham, and while Needham does teach that the automatic feature detection unit 250 determines one or more initial values of size of the face (See Para. [0021]), Needham fails to teach that the one or more values of size of the face are adjusted in the method. However, noting the Kinjo reference, Kinjo teaches a method of digital image processing using face detection (face extraction), wherein an initial value of size of the face is determined (in identifying a certain person in the scene), and adjusting the values of size of the face (i.e. slimming the face according to processing specific to the identified person). Please refer to Figs. 2 and 3, and Col. 8, Lines 14-17, Col. 9, Line 46 – Col. 10, Line 37, and Col. 11, Lines 3-23. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the adjusting of values of size of the face, as taught by Kinjo, with the adjusting of image parameters of Needham. One would have been motivated to do so because, as Kinjo teaches in Col. 1, Lines 16-21,

enabling the adjustment of the values of the size of the face allows the user to alter the image to their specific preference, therefore providing a customized image to the user.

Allowable Subject Matter

Claims 8 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding both claim 8 and claim 30, the prior art was not found to teach or reasonably suggest, in view of and in combination with the respective independent claims, a method of manually removing one or more detected faces in an image by increasing a sensitivity level of the face identifying.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Lin et al. (U.S. Pub. 2002/0172419)

Sannoh et al. (U.S. Pub. 2003/0071908)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory V. Madden whose telephone number is 571-272-8128. The examiner can normally be reached on Mon.-Fri. 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Madden
September 21, 2007

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